

Preliminary

ORDER NO ARD-7010094



# NATIONAL Service Manual

## 8 TRACK STEREO CARTRIDGE TAPE DECK MODEL RS-803US



### SPECIFICATIONS

Power Source:	AC: 90~110, 110~125, 200~220, 220~250 volts 50/60 Hz	Tape Speed:	3-3/4 ips
Power Consumption:	Approx. 30 watts	Fast Forward Time:	Approx. 300 seconds with cartridge tape 57 m
Motor:	DC electronic governor motor	Frequency Response:	50~12,000 Hz
Transistors:	2SB 348(2) 2SB 346(4) 2SA 101(2) 2SB 324(2) 2SB 175(1) 2SD 205(1) 2SB 172(1)	Inputs:	2 "MIC" 5.6 KΩ -75 dB 2 "AUX IN" 100 KΩ -27 dB
Diodes & Rectifiers:	OA90(2) FR202(1) SW0501(2) 1S990(1) KC2DP22/1(2)	Outputs:	2 "LINE OUT" 330Ω -6 dB 1 "HEADPHONE" 8Ω 45 mV
Recording System:	AC bias 35 kHz	DIN Socket:	Record/playback connector
Erasing System:	AC erase	Dimensions:	16-5/8" (W) × 4-1/2" (H) × 9-1/4" (D)
Recording Track System:	8 track, 2 channel stereo	Weight:	12-1/8 lbs

## LOCATION OF PARTS

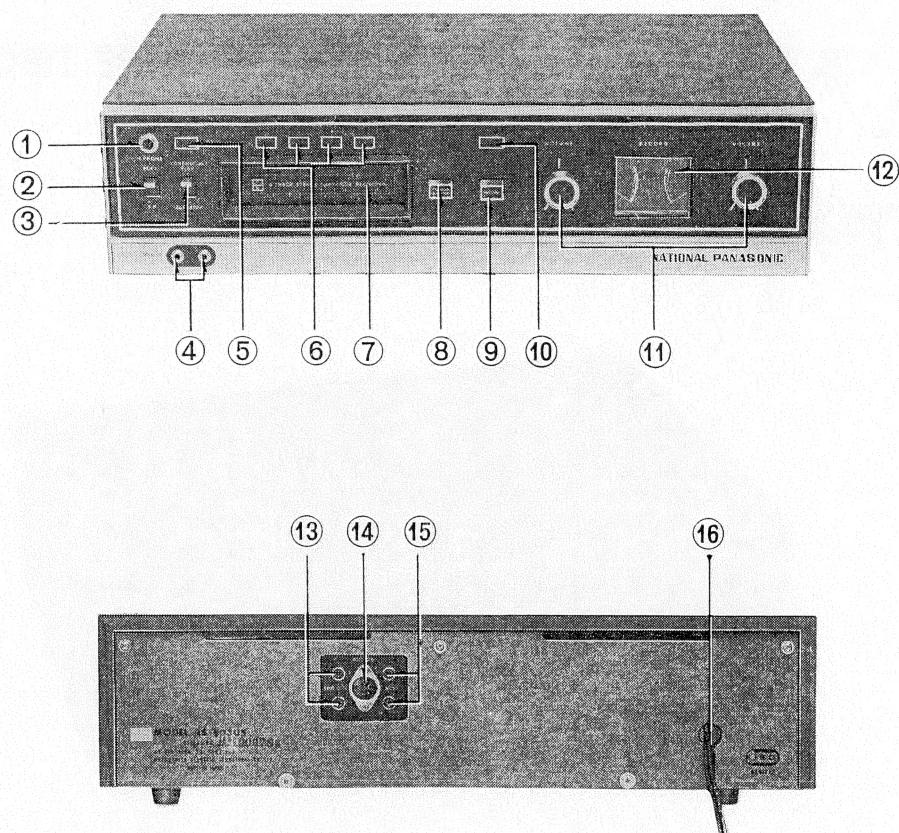
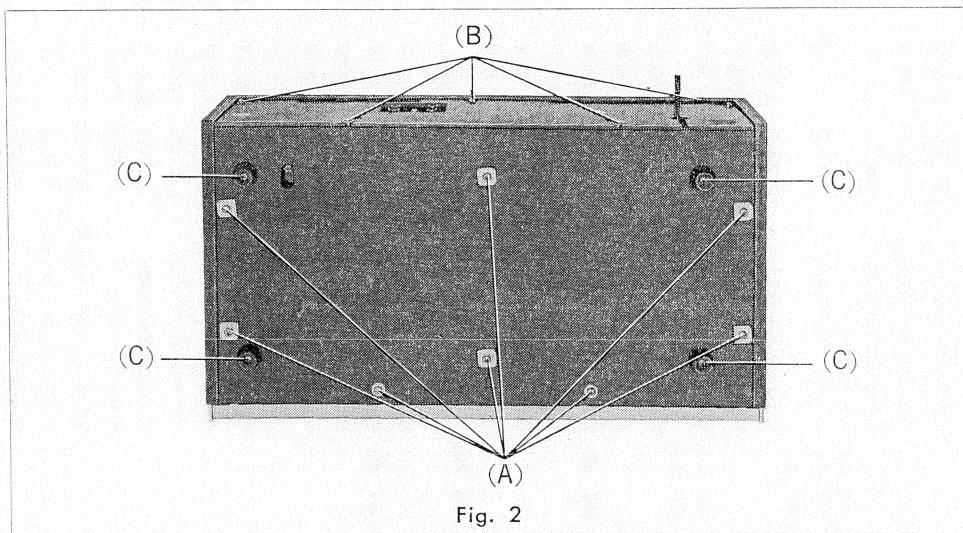


Fig. 1

① Headphone Jack	⑨ Record Button
② Fast Forward Control	⑩ Recording Indicator
③ Automatic Stop Switch	⑪ Recording Level Adjustment Knobs
④ Microphone Jacks	⑫ VU Meter
⑤ Auto-stop Indicator	⑬ Line Output Jacks
⑥ Program Indicator	⑭ DIN Socket
⑦ Tape Slot	⑮ Auxiliary Input Jacks
⑧ Program Selector Button	⑯ Power Cord

# DISASSEMBLY INSTRUCTIONS

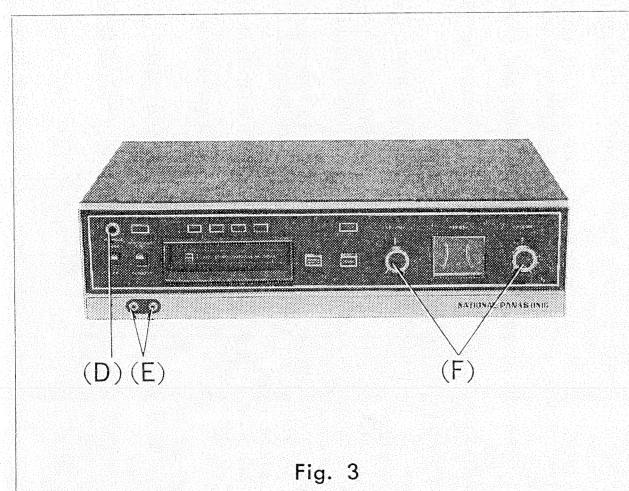
## HOW TO REMOVE BACK BOARD & BOTTOM BOARD



1. Remove 5 Back Board Holding Screws (A) and remove Back Board.

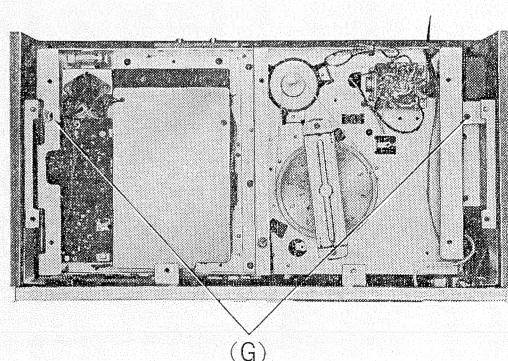
2. Remove 8 Bottom Board Holding Screws (B) and 4 Rubber Foot Holding Screws (C). Remove Bottom Board.

## HOW TO REMOVE CHASSIS



1. Remove Headphone Jack Holding Nut (D), 2 MIC Jack Holding Nuts (E) and 2 Volume Control Knobs (F).

2. Remove 2 Chassis Holding Screws (G), pull out Chassis onto the back board side and remove it.



## RESISTORS

### **REPLACEMENT PARTS LIST**

Before you give us an order for parts, please read the following instructions without fail.

1. Parts written in gothic in this Replacement Parts List are always kept in stock in our department, and can therefore be shipped earlier than other parts.
2. Parts written in slender letters are not kept in stock, and will therefore be shipped later. So place an order for them separately.
3. Disassembled parts of Sub Assembly are respectively given a suffix to the Ref. No.
4. Parts other than the above are not available from us.

### **LISTA DE PIEZAS DE REPUESTO**

Antes de hacernos un pedido de piezas, dígnese leer sin falta las instrucciones siguientes:

1. De las piezas cuyos nombres aparecen escritos con letras góticas en esta Lista de Piezas de Repuesto, tenemos surtido en nuestro departamento, y por lo tanto, podemos enviarlas antes que otras.
2. De las escritas con letras más finas, no tenemos surtido, por lo que su envío se retardará. Por eso, haga el favor de hacer por separado los pedidos.
3. Las piezas desmontadas del Sub Assembly llevan respectivamente un sufijo a la Referencia No.
4. No podemos proveer de piezas no mencionadas arriba.

### **LISTE DES PIÈCES DE RECHANGE**

Avant de nous commander des pièces, veuillez lire sans faute les instructions suivantes:

1. Les pièces érites en grosses lettres dans cette Liste de rechange sont toujours en magasin dans notre section, et pourront donc s'expédier plus vite que les autres pièces.
2. Les pièces écrites en minces lettres ne sont pas en magasin, et s'expéderont plus tard. Passez-nous donc séparément votre commande pour elles.
3. Les pièces désassemblées du Sub Assembly ont chacune un suffixe au Ref. No.
4. D'autres pièces que celles montrées ci-dessus ne sont pas disponibles chez nous.

### **ERSATZTEILELICHT**

Bitte lesen Sie die folgende Anweisung sorgfältig, bevor Sie die Bestellung auf unsere Ersatzteile geben.

1. Die Ersatzteile, die in dieser Liste mit der fetten Schrift geschrieben sind, sind immer in unserer Abteilung als Vorrat befindlich, und sind daher schneller zu liefern als andere Teile.
2. Die Ersatzteile in der dünnen Schrift sind nicht vorrätig und brauchen deshalb einiger Zeit bis zur Lieferung. Bitte geben Sie daher die Bestellung separat für solche Teile.
3. Demontierte Teile der Unterbaugruppe sind je mit Nachsilbe nach dem Referenznummer versehen.
4. Andere Ersatzteile als die obigen sind nicht von uns zu liefern.

### **更換用零件一覽**

特此說明有關更換用零件如下，以供參考。敬請在訂購之前惠豫一讀，以免發生差錯為荷。

1. 凡是在更換用零件一覽中用粗字體所表示者，均常備有現貨在本事業部，故此均得以較之其他零件提早供應之。
2. 用細字體說明者則不然，因為沒有現貨，自然不得及時供應。
3. 諸將將上述兩者分開行之為宜。
4. 凡是局部裝備組件所拆散的零件，各附有接尾數目字在該組件查詢號碼之後頭。

Ref. No.	Description	Part No.
R1, 2 ...	Carbon Resistor	390Ω 1/4 W ERD14TJ391
R3, 4 ...	Carbon Resistor	100 KΩ 1/4 W ERD14VJ104
R5, 6, 69 ...	Carbon Resistor	1000Ω 1/4 W ERD14TJ101
R7, 8, 9, 10 ...	Carbon Resistor	5.6 KΩ 1/4 W ERD14VJ562
R11, 12, 21, 22, 25, 26, 33, 34	Carbon Resistor	10 KΩ 1/4 W ERD14VJ103
R13, 14, 49, 50, 70, 73 ...	Carbon Resistor	2.2 KΩ 1/4 W ERD14VJ222
R15, 16 ...	Carbon Resistor	100Ω 1/4 W ERD14VJ101
R17, 18, 61, 62	Carbon Resistor	1.8 KΩ 1/4 W ERD14VJ182
R19, 20, 35, 36, 65, 66 ...	Carbon Resistor	33 KΩ 1/4 W ERD14VJ333
R23, 24 ...	Carbon Resistor	39 KΩ 1/4 W ERD14VJ393
R27, 28, 29, 30	Carbon Resistor	1.2 KΩ 1/4 W ERD14VJ122
R31, 32 ...	Carbon Resistor	3.3 KΩ 1/4 W ERD14VJ332
R37, 38 ...	Carbon Resistor	2.7 KΩ 1/4 W ERD14VJ272
R39, 40 ...	Carbon Resistor	56Ω 1/4 W ERD14VJ560
R41, 42, 68, 79, 80 ...	Carbon Resistor	470Ω 1/4 W ERD14VJ471
R43, 44 ...	Carbon Resistor	4.7 KΩ 1/4 W ERD14VJ472
R45, 46, 47, 48	Carbon Resistor	3.9 KΩ 1/4 W ERD14VJ392
R51, 52 ...	Carbon Resistor	120Ω 1/4 W ERD14VJ121
R55, 56 ...	Carbon Resistor	330Ω 1/4 W ERD14VJ331
R57, 58 ...	Carbon Resistor	18Ω 1/4 W ERD14VJ180
R59, 60 ...	Carbon Resistor	8.2Ω 1/4 W ERD14TJ8R2
R63, 64 ...	Carbon Resistor	330 KΩ 1/4 W ERD14VJ334
R67 ...	Carbon Resistor	1.5 KΩ 1/4 W ERD14VJ152
R71 ...	Carbon Resistor	1 KΩ 1/4 W ERD14VJ102
R74 ...	Solid Resistor	470Ω 1/2 W ERC12GM471
R75 ...	Wire-wound Resistor	0.75Ω 1/2 W ERM12PJR75
R76 ...	Wire-wound Resistor	220Ω 2 W ERM2P221
R77 ...	Solid Resistor	100Ω 1/2 W ERC12GM101
R78 ...	Solid Resistor	15Ω 1/2 W ERC12GM150
R81, 82 ...	Carbon Resistor	270Ω 1/4 W ERD14VJ271
R83, 84 ...	Carbon Resistor	15 KΩ 1/4 W ERD14VJ153
R99 ...	Carbon Resistor	33Ω 1/4 W ERD14VJ330
R100 ...	Carbon Resistor	150 KΩ 1/4 W ERD14VJ154
R101, 102 ...	Carbon Resistor	1 KΩ 1/4 W ERD14VJ102

## VARIABLE RESISTORS

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
VR1, 2	Semi-fixed Variable Resistor 10 KΩ (B)	EVLTOAA00B14	Tr1, 2	Transistor	2SB348
VR3, 4	Variable Resistor 5 KΩ (A)	EVCBOAL25A53	Tr3, 4, 7, 8	Transistor	2SB346
VR5, 6	Semi-fixed Variable Resistor 1 KΩ (B)	EVLTOAA00B13	Tr5, 6	Transistor	2SB101C <sup>①</sup>
VR7	Semi-fixed Variable Resistor 20 KΩ (B)	QVLTTONAA00B24	Tr9	Transistor	2SB324 (D, E, F)
			Tr10	Transistor	2SB175 <sup>②</sup>
			Tr11	Transistor	2SD205 (M)
			Tr12	Transistor	2SB172A

## CAPACITORS

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
C1, 2, 5, 6, 23, 24 ... 29, 30	Electrolytic Capacitor C3, 4, 17, 18, 21, 22, 27, 28,	3.3 $\mu$ F	ECEA25V3R3N	DIODES & RECTIFIERS	0A90
C7, 8 ...	Electrolytic Capacitor	10 $\mu$ F	ECEA10V10N	Diode	FR202
C9, 10 ...	Electrolytic Capacitor	47 $\mu$ F	ECEA6V47N	Diode	SW0501
C11, 12, 56 ...	Mylar Capacitor	0.015 $\mu$ F	ECQMO5153MZ	Diode	1S990
C13, 14 ...	Mylar Capacitor	0.056 $\mu$ F	ECQMO51563MZ	Diode	KC2DP22/1
C15, 16 ...	Styrol Capacitor	470 pF	ECQSI1471JZ	Selenium Rectifier	
C25, 26, 31, 32	Aluminum Capacitor	0.22 $\mu$ F	ECAG25ER22	COILS	
C33, 34, 39, 40, 51, 52, 55 ...	Electrolytic Capacitor	220 $\mu$ F	ECEA6V220N	L1, 2 ...	Peaking Coil
C35, 36 ...	Mylar Capacitor	0.1 $\mu$ F	ECQMO5104MZ		QLH2007
C37, 38 ...	Mylar Capacitor	0.039 $\mu$ F	ECQMO5393MZ		
C41, 42 ...	Electrolytic Capacitor	33 $\mu$ F	ECEA16V33N	TRANSFORMERS	
C43, 44 ...	Mylar Capacitor	0.0022 $\mu$ F	ECQMO52222MZ	T1, 2 ...	Output Transformer
C46 ...	Electrolytic Capacitor	1000 $\mu$ F	ECEA16V100N	T3	Power Transformer
C47 ...	Electrolytic Capacitor	4.7 $\mu$ F	ECEA25V4R7N	T4	Oscillator Coil
C48, 66 ...	Electrolytic Capacitor	220 $\mu$ F	ECEA16V220N	T5	Oscillator Output Transformer
C49 ...	Electrolytic Capacitor	2200 $\mu$ F	ECEA16V2200N		
C53 ...	Styrol Capacitor	2200 pF	ECQSI1222JZ		
C54 ...	Aluminum Capacitor	4.7 $\mu$ F	ECSY16EF4R7		
C57 ...	Styrol Capacitor	820 pF	ECQSS5821J		
C58, 63 ...	Electrolytic Capacitor	470 $\mu$ F	ECEA16V470N		
C59, 60 ...	Mylar Capacitor	0.022 $\mu$ F	ECQMO5223MZ	S1	Power Switch
C61, 62 ...	Styrol Capacitor	270 pF	ECQSI1271JZ	S2	Program Indication Selector Switch
C67 ...	Electrolytic Capacitor	4.7 $\mu$ F	ECEA10V47N	S4	Relay Switch

## MECHANICAL PARTS

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
<b>S5</b>	... ... Auto Stop Switch	<b>QST0007</b>	<b>M1</b>	... ... Motor	<b>QDM1333</b>
<b>S6</b>	... ... Record/Playback Selector Switch	<b>QSS1091</b>	<b>M2</b>	... ... Motor Holding Screw $\oplus 3 \times 8$	XTN3+8B
<b>S7</b>	... ... Program Selector Switch	<b>QSB0169A</b>	<b>M3</b>	... ... Motor pulley	<b>QDP1310</b>
<b>S8</b>	... ... FF Switch	<b>QST0013</b>	<b>M4</b>	... ... Motor Pulley Screw	<b>XXA26D6</b>
<b>S9</b>	... ... Playback Switch	<b>QSS1108</b>	<b>M5</b>	... ... Screw $\oplus 3 \times 8$	XTN3+8B
<b>S10</b>	... ... Power Voltage Selector Switch	<b>QSR0004</b>	<b>M6</b>	... ... Switch Holding Plate	QMA1943
<b>S11</b>	... ... Stop Switch	<b>QSB0101</b>	<b>M7</b>	... ... Change Lever-C	QML1861
			<b>M8</b>	... ... Return Spring	<b>QBT1216M</b>
			<b>M9</b>	... ... Screw $\oplus 2.6 \times 6$	XSN26+6
			<b>M10</b>	... ... Head Adjusting Screw	<b>QHQ1088</b>
			<b>M11</b>	... ... Washer W2	XWG2
			<b>M12</b>	... ... Screw Adjusting Spring	<b>QBC1156</b>
			<b>M13</b>	... ... Vertical Table	<b>QMF1413</b>
			<b>M14</b>	... ... Head Spacer	QMQL1125
			<b>M15</b>	... ... Head Pressure Spring	<b>QBT1470</b>
			<b>M16</b>	... ... Head Holding Plate	QMF1412
			<b>M17</b>	... ... Head Holding Plate Nut	XNG26E
			<b>M18</b>	... ... Head Holding Plate Washer	XWG26
			<b>M19</b>	... ... Head Holding Plate Screw	<b>XSN26+5</b>
			<b>M20</b>	... ... Screw $\oplus 3 \times 8$	XTN3+8B
			<b>M21</b>	... ... Plunger	<b>QME0125</b>
			<b>M22</b>	... ... Guide Shaft	QMS1800
			<b>M23</b>	... ... Power Source Selector Spring Assembly	<b>QXJ0053</b>
			<b>M24</b>	... ... Pilot Angle	QMA1296
			<b>M25</b>	... ... Screw $\oplus 3 \times 5$	XSN3+5S
			<b>M26</b>	... ... Spring Washer SW3	XWA3B
			<b>M27</b>	... ... Safety Lever Assembly	<b>QXL0371</b>
			<b>M28</b>	... ... Stop Ring E3	XUC3FK
			<b>M29</b>	... ... Recording Lever Assembly	<b>QXL0399</b>
			<b>M29-1</b>	... ... Recod Safty Angle	<b>QML1884</b>
			<b>M29-2</b>	... ... Stop Ring E3	XUC3FK
			<b>M29-3</b>	... ... Fiber Washer	QBK7005
			<b>M30</b>	... ... Cartridge Guide	QMH1139
			<b>M31</b>	... ... Cartridge Lid	<b>QMF1415</b>

## CABINET PARTS

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
M32 ...	Guide Roller Shaft-A	QMS1263	G1 ...	... Body Case Assembly	QYJ1223S
M33 ...	Guide Roller Shaft-B	QMS1326	G2 ...	... Back Board	QKU1100
<b>M34 ...</b>	<b>Guide Roller</b>	<b>QBJ1189</b>	<b>G3 ...</b>	<b>... Panel Assembly</b>	<b>QYP0245</b>
<b>M35 ...</b>	<b>Cartridge Rod</b>	<b>QMR1075</b>	<b>G4 ...</b>	<b>... Record Button-A Assembly</b>	<b>QXB0082</b>
M36 ...	Stop Ring E1.5	XUC15FK	G5 ...	... Record Button-B Assembly	QXB0083
<b>M37 ...</b>	<b>Cartridge Lid Spring</b>	<b>QBC1090</b>	<b>G6 ...</b>	<b>... Volume Knob Assembly</b>	<b>QYT0161</b>
M38 ...	Record Lock Arm	QML1857	G7 ...	... Bottom Board	QKU1083
<b>M39 ...</b>	<b>Return Spring</b>	<b>QBT1216M</b>	<b>G8 ...</b>	<b>... Rubber Foot Assembly</b>	<b>QYQ1031S</b>
M40 ...	Stop Ring E4	XUC4FK	G9 ...	... Wooden Screw $\oplus M3.1 \times 8$	XTN3+10A
M41 ...	Stop Ring E3	XUC3FK	G10 ...	... Screw $\oplus 3 \times 6$	XSN3+6RS
M42 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8B	G11 ...	... Screw $\oplus 3 \times 8$	XSN3+8
<b>M43 ...</b>	<b>Return Spring</b>	<b>QBT1216M</b>	<b>G12 ...</b>	<b>... Screw <math>\oplus 4 \times 16</math></b>	<b>XSN4+16RS</b>
M44 ...	Stop Ring E4	XUC4FK	G13 ...	... Wooden Screw $\oplus 3.1 \times 8$	XMM31+8
<b>M45 ...</b>	<b>Lock Lever Assembly</b>	<b>QXL0136</b>	<b>G14 ...</b>	<b>... Wooden Screw</b>	<b>QHQ1094</b>
<b>M46 ...</b>	<b>Lock Spring</b>	<b>QBN1037</b>	<b>G15 ...</b>	<b>... Washer</b>	<b>QWQ1083</b>
M47 ...	Lock Lever Shaft	QMS1325	G16 ...	... Headphone Jack Nut	QNQ1033
<b>M48 ...</b>	<b>Changer Lever</b>	<b>QML1887</b>	G17 ...	... Microphone Jack Nut	QNQ1027
M49 ...	Record Lever-2 Assembly	QXL0372			
<b>M50 ...</b>	<b>Cam</b>	<b>QMG1124</b>			
<b>M51 ...</b>	<b>Flywheel Belt</b>	<b>QDB0135</b>			
M54 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8			
M55 ...	Screw $\oplus 3 \times 6$	XSN3+6S			
M56 ...	Spring Washer 3φ	XWA3B	A1 ...	... Connection Cord-C	QEB14P
M57 ...	Flywheel Retainer	QXH0064	A2 ...	... Head Cleaning Bar	QFQ1025
<b>M58 ...</b>	<b>Flywheel</b>	<b>QXF0031</b>	<b>A3 ...</b>	<b>... AC Plug Adaptor</b>	<b>QJP0603S</b>
<b>M59 ...</b>	<b>Capstan Metal Boss Assembly</b>	<b>QYC0066</b>	<b>A4 ...</b>	<b>... Cartridge Tape</b>	<b>QFT80GNRX</b>
M60 ...	Screw $\oplus 3 \times 6$	XSN3+6S	A5 ...	... Instruction Book	QQT1386
<b>M61 ...</b>	<b>Capstan Felt</b>	<b>QBF1109</b>			
<b>M62 ...</b>	<b>Capstan Oil Cap</b>	<b>QBJ1191</b>			
M63 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8	P1 ...	... Inner Packing	QPN2256
M64 ...	Reinforce Angle	QMA1947S	P2 ...	... Inner Cushion	QPN2129
			P3 ...	... Dust Cover	QFD0121
			P4 ...	... Accessory Bag	QFV0047
			P5 ...	... Cord Pad	QQQ1052

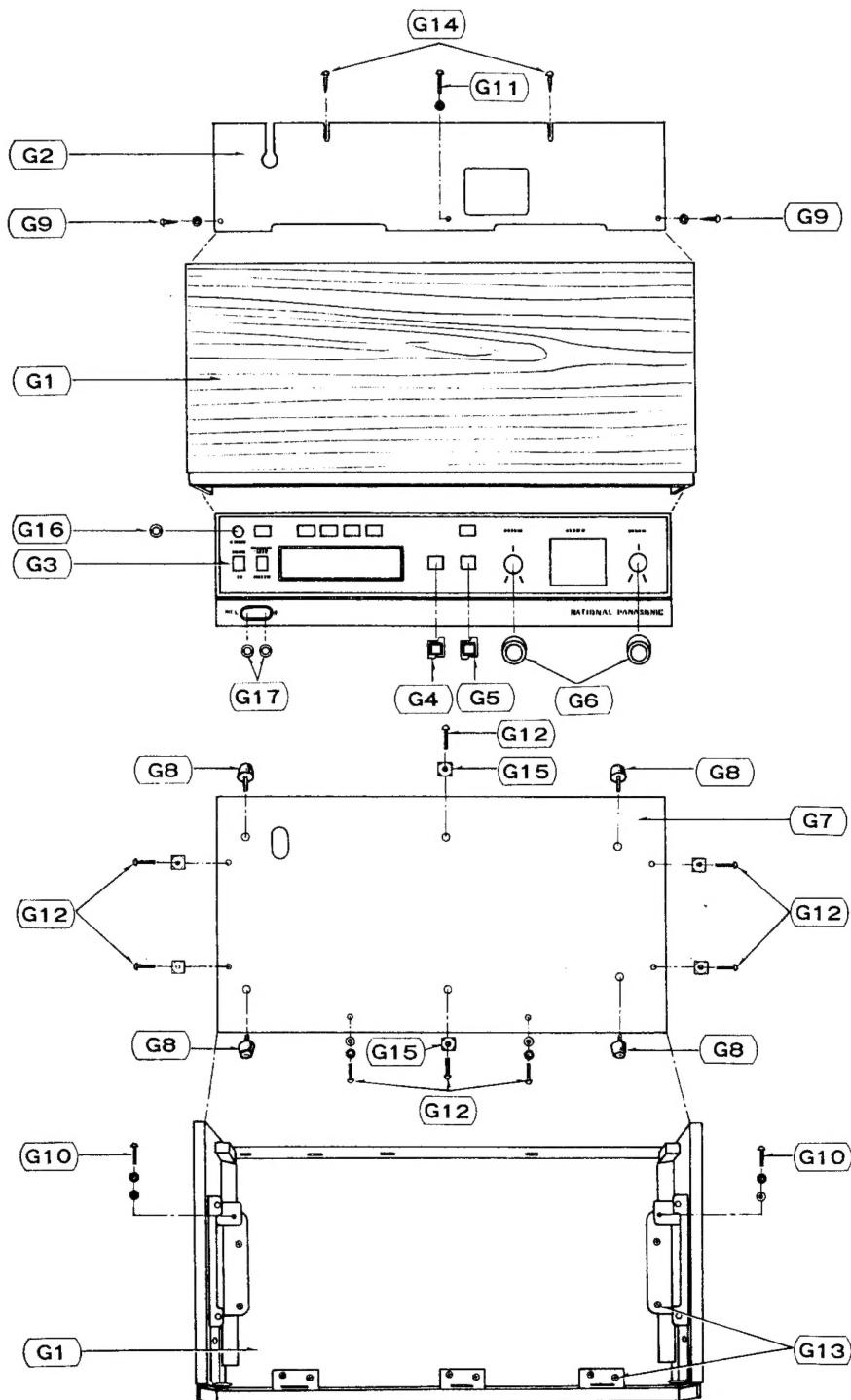
## ACCESSORIES

XTN3+8	A1 ...	... Connection Cord-C
XSN3+6S	A2 ...	... Head Cleaning Bar
XWA3B	A3 ...	... AC Plug Adaptor
QXH0064	A4 ...	... Cartridge Tape
<b>QXF0031</b>	<b>A5 ...</b>	<b>... Instruction Book</b>

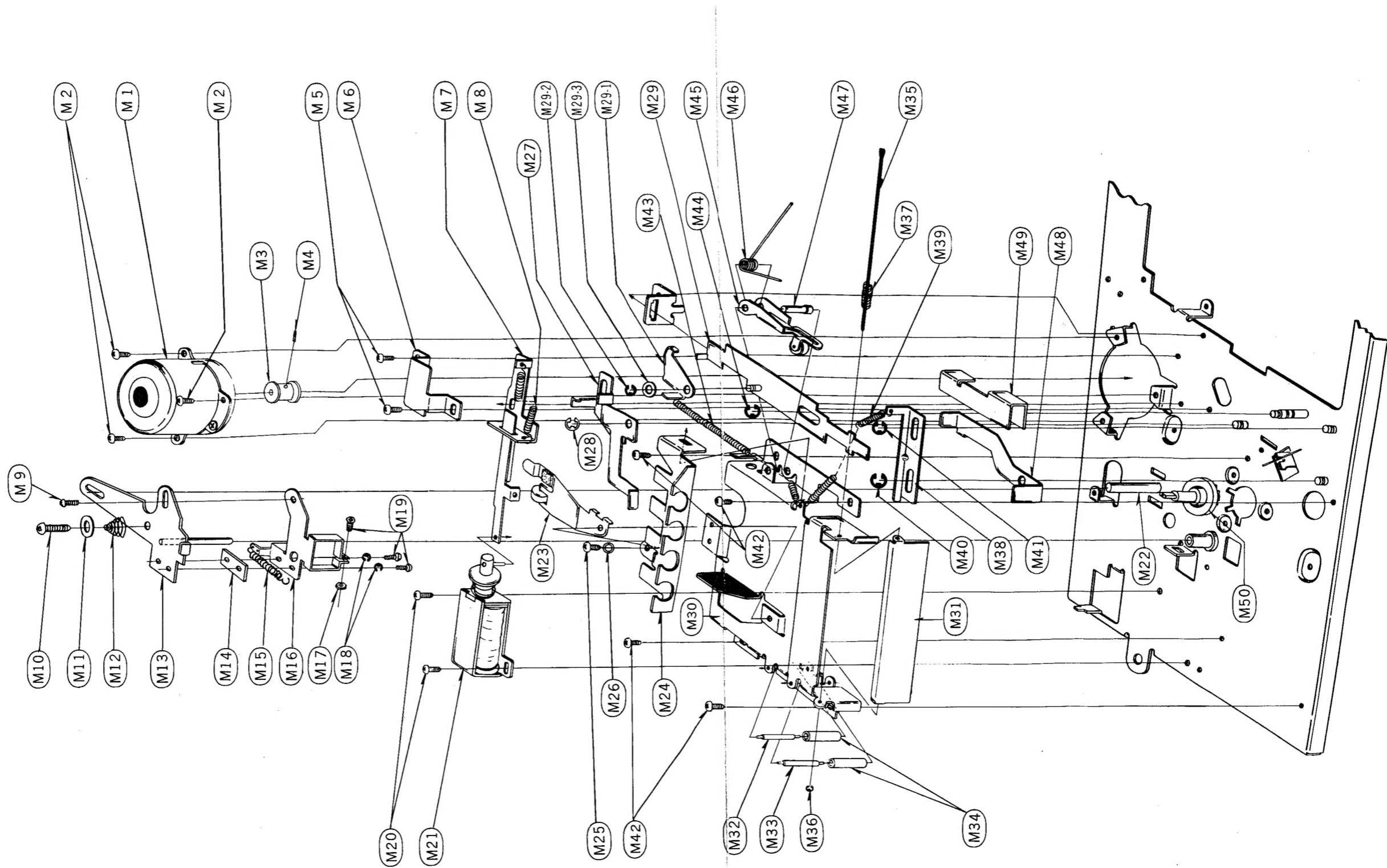
## PACKINGS

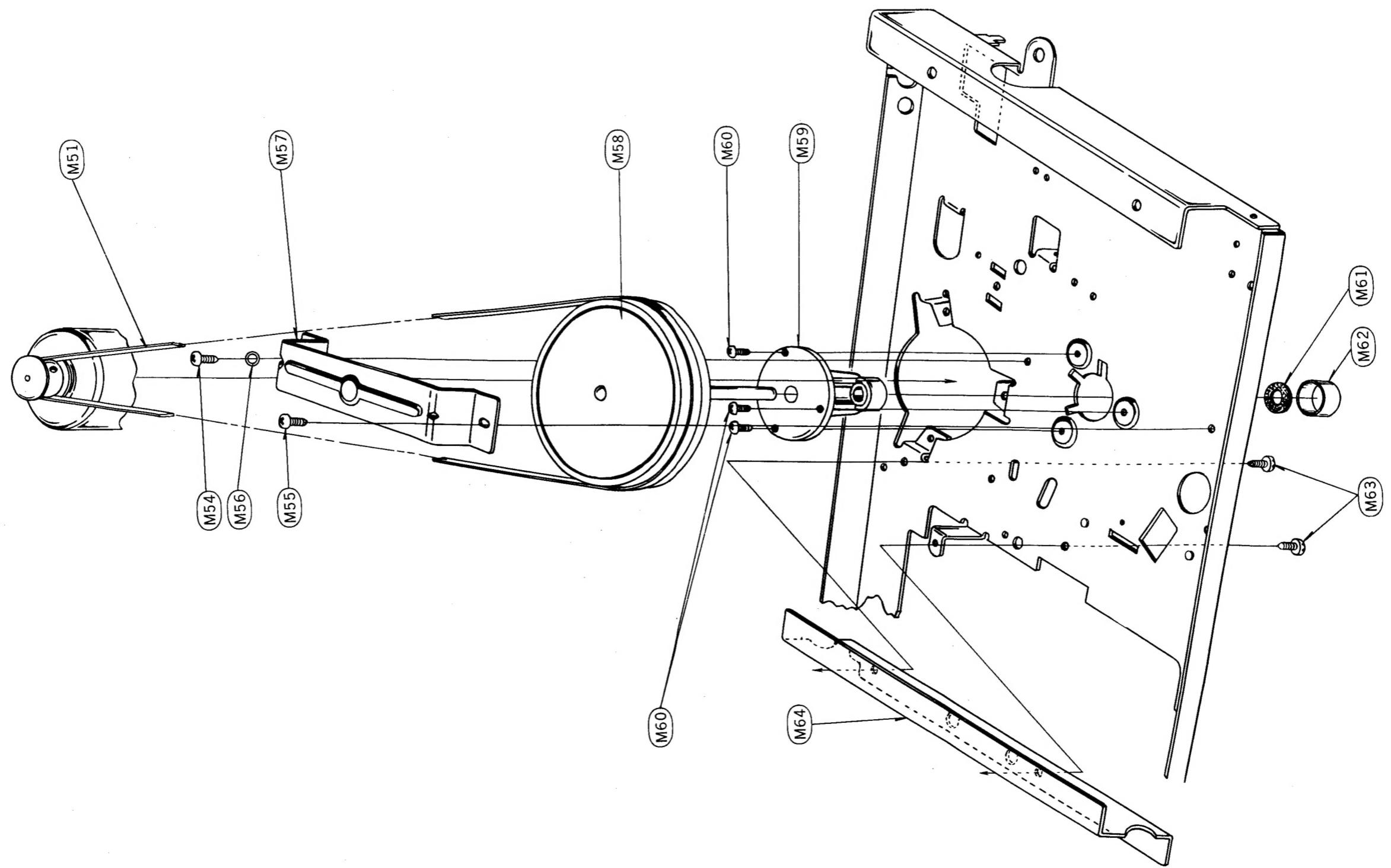
P1 ...	... Inner Packing
P2 ...	... Inner Cushion
P3 ...	... Dust Cover
P4 ...	... Accessory Bag
P5 ...	... Cord Pad

# CABINET PARTS

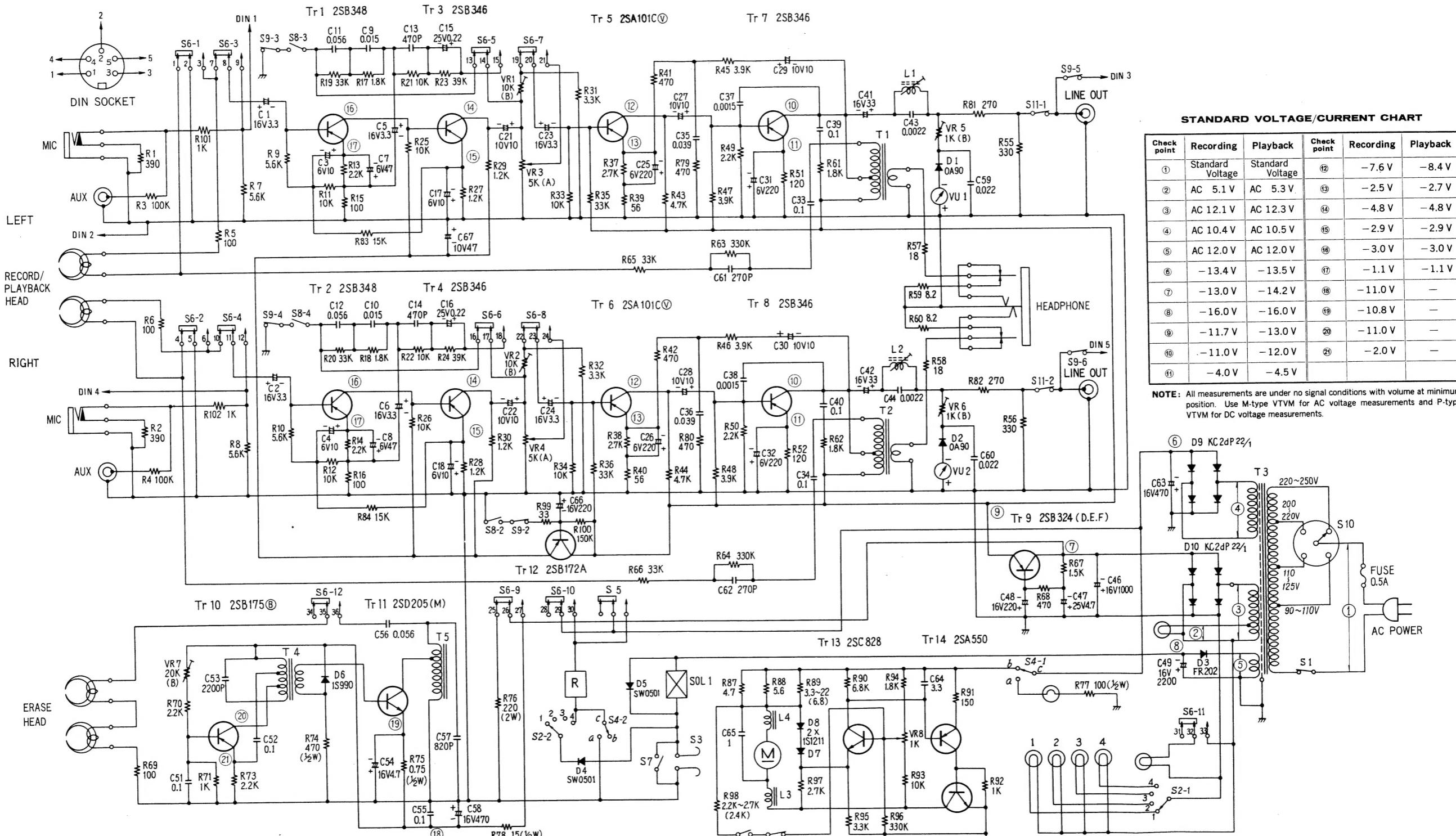


## EXPLODED VIEWS





# SCHEMATIC DIAGRAM MODEL RS-803US



## NOTE:

1. S1 ..... Power Switch (ON when REC button is operated or when cartridge is inserted in).
2. S2 ..... Program Indication Selector Switch.
3. S3 ..... Sensing Switch.
4. S4 ..... Relay Switch (b → a when tape stops automatically).
5. S5 ..... Auto Stop Switch.
6. S6 ..... Record/playback Selector Switch (shown in playback).
7. S7 ..... Program Selector Switch.
8. S8 ..... FF Switch (ON in FF).
9. S9 ..... Playback Switch (ON in playback, OFF in REC).
10. S10 ..... Power Voltage Selector Switch.
11. S11 ..... Stop Switch (ON when cartridge is inserted in).
12. Resistors are 1/4 watt unless specified otherwise.  
 $K=1.000\Omega$ ,  $M=1.000.000\Omega$
13. Capacitors are microfarad ( $\mu F$ ) unless specified otherwise.  
 $P=Micro-microfarads$ .
14. Encircled numbers (○) show the checkpoints for voltage and current. The values are marked in the standard voltage/current chart.

STANDARD VOLTAGE/CURRENT CHART

Check point	Recording	Playback	Check point	Recording	Playback
①	Standard Voltage	Standard Voltage	⑫	-7.6 V	-8.4 V
②	AC 5.1 V	AC 5.3 V	⑬	-2.5 V	-2.7 V
③	AC 12.1 V	AC 12.3 V	⑭	-4.8 V	-4.8 V
④	AC 10.4 V	AC 10.5 V	⑮	-2.9 V	-2.9 V
⑤	AC 12.0 V	AC 12.0 V	⑯	-3.0 V	-3.0 V
⑥	-13.4 V	-13.5 V	⑰	-1.1 V	-1.1 V
⑦	-13.0 V	-14.2 V	⑱	-11.0 V	-
⑧	-16.0 V	-16.0 V	⑲	-10.8 V	-
⑨	-11.7 V	-13.0 V	⑳	-11.0 V	-
⑩	-11.0 V	-12.0 V	㉑	-2.0 V	-
㉒	-4.0 V	-4.5 V			

NOTE: All measurements are under no signal conditions with volume at minimum position. Use M-type VTVM for AC voltage measurements and P-type VTVM for DC voltage measurements.

